N.I.H. record

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TOMATO EXTRACT YIELDS HORMONES

Dr. Mosettig (left) and Dr. Sato discuss tomato extract with Dr. T. D. Fontaine (right) of Dept. of Agriculture.

Important steroid hormones can be synthesized from tomatidine, a chemical compound extracted from the roots and leaves of the tomato plant.

How this is done is outlined by Drs. Yoshio Sato and Erich Mosettig of the Laboratory of Chemistry, NIAMD, and Dr. Alfred Katz, visiting fellow from Switzerland, also with NIAMD, in the February issue of the Journal of the American Chemical Society.

Tomatidine was first isolated by Department of Agriculture scientists in 1948. Since then, experiments at NIH have shown that this compound can be converted into a pregnene derivative by three steps. The derivative, in turn, can be readily transformed into the hormones, progesterone and testosterone.

Normally, these hormones are prepared from three compounds: cholesterol, isolated from animal nerve tissue; stigmasterol, from soybeans; and diosgenin, from Mexican yams. The advantage of using tomatidine is the ready availability of source materials -- the

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DR. KAISER APPOINTED NCI CONTROL CHIEF

Appointment of Dr. Raymond F. Kaiser as Chief of the Cancer Control Branch, NCI, has been announced by Surgeon General Leonard A. Scheele. Dr. Kaiser succeeds Dr. Austin V. Deibert, who has been named PHS Liaison Officer in the Economic Cooperation Administration.

Formerly Assistant Chief of the Cancer Control Branch, Dr. Kaiser will be responsible for State grants-in-aid, special control and teaching grants, consultation services, demonstration projects, and professional education. These services were developed by Drs. Kaiser and Deibert in 1946 as the first official national cancer control program in the United States.

Dr. Kaiser received his M.D. degree from the University of Colorado in 1937, and his M.P.H. from Harvard in 1942. He began his PHS service in 1937, served in PHS hospitals, was ship surgeon in the Aleutian Islands, associate health officer in Forest County, Miss., and consultant in PHS regional offices.

HEALTH PICTURES COMPETE FOR 'OSCAR' AWARD

Two films on cancer and mental health, produced with the cooperation of NIH, are among the three finalists competing for the film industry's "Oscar," awarded annually to the best documentary picture of the year.

The winner will be announced, along with a host of other film awards, at the dinner of the Academy of Motion Picture Arts and Sciences in Hollywood on March 29.

The cancer entry is "Fight: Science Against Cancer," a documentary sponsored by NCI and the Department of National Health and Welfare of Canada. It is a shortened version of a 34-minute film produced by the Medical Film Institute of New York and the National Film Board of Canada.

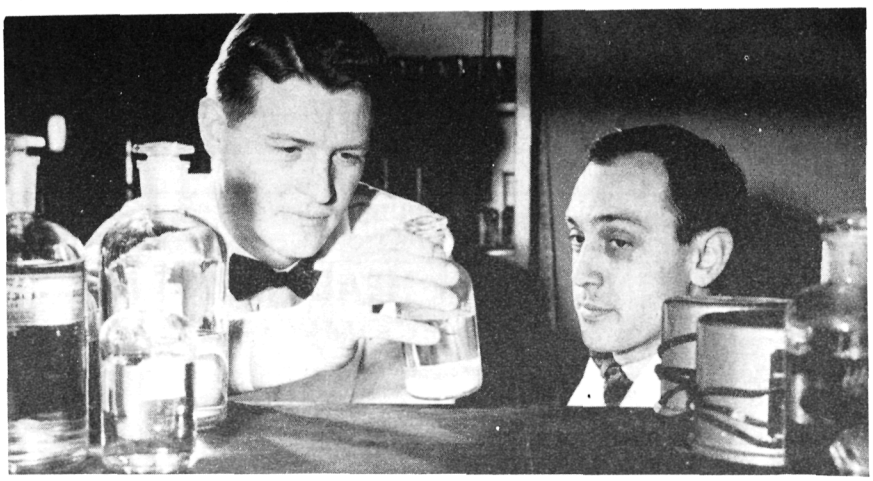
Purpose of the film is to explain the complexity of cancer research. It is narrated by Raymond Massey, noted stage and movie actor, and points up the meaning of new achievements in biology, physics, chemistry, and genetics.

The other finalist is "The Steps of Age," which explores the emotional problems of older people. The film centers about a woman of 62 at a critical point in her life. It is intended to help older people understand their experiences and to give younger persons better insight into themselves and their elders.

Sponsored by the State of South Carolina, the movie was made by Film Documents, Inc., for the Mental Health Film Board, of which Dr. Joseph M. Bobbitt and Mrs. Alberta Altman of NIMH are members. Consultative services were provided by NIMH.

Studies in Protein Synthesis

No. 42 of a Series



Dr. Anfinsen (left) and Dr. Steinberg examine reagent for peptide fractionation in protein studies at National Heart Institute.

Of the chemical components that make up the living cell, the proteins are by far the most complex. Thousands of different types of protein molecules, each containing many hundreds of amino acid structural units, must be synthesized to support the structural and enzymatic functions of tissues. These protein molecules are not static substances. They are part of a dynamic process involving the continuous breakdown and resynthesis of protein.

How this process takes place is being studied in NHI's Section on Cellular Physiology by Dr. Christian B. Anfinsen and Dr. Daniel Steinberg.

The mechanisms by which cells carry out this intricate task of forming proteins by synthesis remain one of the most obscure areas in biochemical research. Are proteins built up from free amino acids by an instantaneous, pattern sort of mechanism -- or does the synthesizing process involve the preliminary formation of forerunner substances--peptides? What are the sources of energy for this linking together of structural units? Do mechanisms exist by which some proteins may be interconverted into others?

Some of these questions, as they relate to the biosynthesis of egg albumin by the hen's oviduct, are being investigated. Oviduct tissue is an excellent material for such study since its normal daily activity during egg formation involves the production of as much as four to five grams of protein. By incubating small bits of oviduct with radioactive carbon-tagged amino acids, it has been possible to prepare, and isolate, pure samples of egg albumin containing as part of its structure the isotopic amino acid used in the experiment.

To determine the nature of the over-all mechanisms of synthesis, C^{14} aspartic acid-tagged egg albumin has been subjected to digestion by a specific enzyme which removes six amino acid molecules from the total of some 300 making up the parent protein molecule. Among the six molecules split off is one of aspartic acid, the specific radio-activity of which was found to be considerably higher than that of the average aspartic acid remaining in the nondigested part of the egg albumin. This finding suggests that the molecule may have been formed from peptide forerunners.

Such basic research has more than theoretical interest. The findings may prove helpful in understanding protein synthesis in relation to health and disease. For example, certain components of the plasma proteins may be formed at abnormal rates during the development of atherosclerosis, a form of hardening of the arteries.

Here and There

X-rays for Employees

Free chest X-rays will be available to all employees when the mobile unit of the Montgomery County Tuberculosis Association visits NIH, March 20-22. The unit will be stationed at central locations on each of the three days. Employees will be notified regarding the time scheduled for division units or branches.

Awards and Honors

The World Health Organization has reappointed Dr. Nathan B. Eddy of NIAMD to its Expert Advisory Panel on Drugs Liable to Produce Addiction.

Drs. Willie W. Smith and Louise Marshall of NIAMD have been elected members of the Washington Academy of Sciences.

Heart Campaign

Washington Heart Association envelopes, distributed to NIH employees who wish to contribute to the 1951 Heart Campaign, may be returned to the Personnel Branch, Room 21, Building 1.

March of Dimes

NIH employees contributed $200.37 to the 1951 March of Dimes, fund raising effort of the National Foundation for Infantile Paralysis.

State Tax Forms

Maryland income tax forms are now available in Room 21, Building 1. The deadline for filing returns is April 15.

Trips and Talks

Dr. James H. Peers, Chief of the Section on Pathologic Anatomy, NIAMD, attended a meeting of the American Academy of Forensic Sciences in Chicago, March 1-3.

Miss Cecile Hillyer, Research Facilities Planning Branch, attended the annual meeting of the American Orthopsychiatric Association, February 22-24, in Detroit. The AOA, composed of psychiatrists, clinical psychologists, and psychiatric social workers, has as one of its principal purposes the fostering of research in the field of human behavior.

CREDIT UNION VOTES LOAN INTEREST HIKE

The interest rate on NIH Credit Union loans is slated to go up May 1.

An announcement by the Board of Directors states that loans after May 1 will carry interest at the rate of one percent a month instead of one-half percent. This applies only to the first $1,000. On sums over $1,000, interest will remain a half percent.

Board members voted to hike interest rates because of increased operating costs and because Credit Union savings have doubled while the number of loans has increased only 50 percent. Their announcement pointed out that loans made between now and May 1 will continue to carry the old interest rate.

During 1950, the Credit Union made 538 loans totaling $181,195. This compares with 381 loans for a total of $98,365 in the preceding year.

Loans to finance auto purchases and repairs headed the list last year. These totaled $58,051, with purchase and maintenance of homes and property next for a total of $34,899. Loans in the miscellaneous category ranked third and amounted to $32,286. Average size of loans was $337.

TRAINING PLAN HELPS NIAMD SECRETARIES

In 18 months of operation, NIAMD's in-service training program for secretaries has proved a valuable aid in developing administrative skills and familiarizing employees with services provided by other offices at NIH.

The program was organized by William G. Baylis, Executive Officer of NIAMD, to meet the need for exchange of information on current problems and to brief secretaries on broader aspects of their jobs.

Secretaries to the Laboratory and Section Chiefs meet every two weeks. They review changes in operating procedures; study methods of handling congressional inquiries, supply requisitions, preparation of manuscripts, and travel reservations; and examine many other problems. Representatives from NIH service branches are invited as guest lecturers.

NIH Spotlight

Esther Deel

Mrs. Esther Deel is Administrative Assistant to Dr. David E. Price, Associate Director of NIH, having transferred with him from the Division of Research Grants.

Mrs. Deel arranged the details for the recent joint session of the National Advisory Councils. This consisted of preparing the agenda; appointing committees to "house and feed" the 200 council members and PHS staff; finding space for conference meetings; and providing secretarial services for council members.

Two hundred guests arriving at one time would be enough to floor some, but not Mrs. Deel. "What to do with 200 coats and hats without a cloak room and a hat check girl" -- and "What if it rains?" are examples of some of the problems that had to be met. When not occupied with council matters, Mrs. Deel relieves Dr. Price of the many details which crop up in the administration of the extramural programs.

Born at Ehrhardt, S. C., Mrs. Deel earned scholarships for each of four years at Winthrop College, Rock Hill, S. C. She majored in business administration and English.

Mrs. Deel came to Washington in 1933. She has held a number of responsible Government positions, among them business analyst for the Alien Properties Custodian during World War II.

At home, Mrs. Deel likes to make her own clothes and work in her garden. She does not like to cook, is always looking for culinary shortcuts, and looks forward to the day when steak and vegetable "pills" will supplant regular meals.

R & W ASSOCIATION WILL SPONSOR DANCE

The NIH Recreation and Welfare Association will hold a St. Patrick's Eve dance in Wilson Hall on Friday, March 16, from 9 p.m. to 1 a.m. All employees are invited to attend.

A "Hamster" floor show will be presented during intermission, and refreshments will be served. Three spot prizes will be awarded during the evening, as well as a door prize. Music will be provided by Dick Stretton and his orchestra.

Tickets may be obtained from Recreation and Welfare representatives in each building. Their names are available from Julia Rowady, Ext. 521. The price is $1 a couple, with a 25-cent discount to employees who are members of the Association.

The social committee in charge of arrangements includes Ernestine Gibbons, chairman, Gladys Marine, Mildred McGill, Mary Alice Dean, Lucille Dyson, Virginia McLaughlin, Clair Lacey, Phil Williams, and Robert Frieze.

PERSONNEL QUARTERS EMBODY NEW FEATURES

NIH employees who have visited Personnel Branch's new quarters in Room 21, Building 1 will be interested to know that the renovation job embodies several features which will be found in the Clinical Center when it is completed.

The fluorescent light and asphalt tile are materials slated for use in the new building; and the movable partitions are one of several possible types under consideration.

The refurbished quarters, formerly occupied by the NIH carpenter shop, have 400 square feet less than Personnel's old offices. This reduction was made possible by better utilization of space and the prior gradual reduction in staff.

Personnel was among the several offices that moved recently to new locations in Building 1. The job of planning the new layout was carried out by the Buildings Management Branch, and construction was done by an outside firm under the supervision of the Public Buildings Service of GSA.

DRAWING UP BUILDING PLANS EXACTING TASK

To most outsiders, construction blueprints are about as illuminating as a short course in Sanskrit. The untrained eye sees only an elaborate maze of lines, dimensions, and material specifications difficult to visualize as a working pattern for the building activity that follows.

But to a construction foreman, for example, they present a different picture. They help him in organizing his work crews and assembling the needed materials, providing countless details without which he would be helpless to direct the work of his bricklayers, carpenters, electricians, plumbers, and laborers.

Preparing all these details on blueprints at NIH is the job of the Plans and Specifications Section, Buildings Management Branch. The section is headed by Francis S. Taylor, whose assistants are Homer Jones and Melvin E. Ball.

From this section go the plans that are submitted to the various maintenance shops here for all remodeling, installation, and construction work. The same service is provided for work performed by outside contractors. After contracts are awarded, the Section is responsible for seeing that the work is completed in accordance with contract requirements.

The Section also maintains a unit that turns out signs for all the Institutes and furnishes blueprints for various activities. Over 10,000 plans are in the Section's files, and they are referred to constantly in the maintenance and repair of NIH buildings.

Not all work is limited to this station. On occasion, the Section turns out plans and specifications for NIH field activities. These have included the Rocky Mountain Laboratory at Hamilton, Montana; PHS hospitals in Baltimore, New York, and Lexington, Ky.; and the George Washington Hospital and Georgetown Dental School in Washington.

Hundreds of blueprints have been reproduced for the Clinical Center planning committee and for the Purchase Section.

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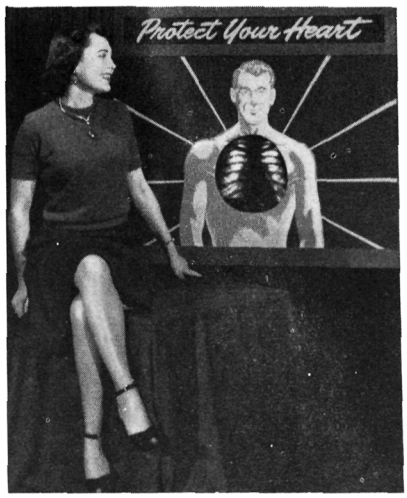
PROWLER'S CHOICE



A burglar with a weakness for cheesecake photography broke into the offices of the Washington Heart Association the night of St. Valentine's Day and made off with $50 in petty cash and two photos of NIH's Sonia Sperling.

The pictures show Miss Sperling, who is secretary to Dr. Sam R. Hall of the Research Grants Division, seated beside an exhibit captioned "Protect Your Heart." They were intended for use in connection with the Heart Association's February drive for $80,000 in the Washington area.

Apparently intrigued by Miss Sperling's ingratiating smile, the thief added the two photos to the rest of his booty. After all, the day was Saint Valentine's, traditional day of romance.

BLOOD DRIVE RESULTS

Through the American Red Cross, 101 NIH employees donated 98 pints of blood on February 21 to help meet the increased quota of the Washington Regional Blood Center. The mobile unit was set up in Wilson Hall.

The Washington Center now supplies the complete blood requirements of 16 of the 21 hospitals in the District of Columbia. Its quota has been increased in recent months to meet the needs of the armed forces and to stockpile blood derivatives for civil defense emergency reserves.

In addition to the District of Columbia, the Washington Center serves 17 outlying counties. Maximum donation accepted from any individual is one pint.

NIH BALL PLAYERS TO MEET IN WILSON HALL

NIH softball players will meet Thursday, March 8, in Wilson Hall at 12 noon to discuss plans for the coming season, according to Britton H. Smith of NCI, who is Secretary-Treasurer of the NIH club.

The team is entered in the District League and will play twice a week during the season. Games begin at 6 p.m., at the recreation field at 16th and Kennedy Streets N. W.

The league is divided into units of six teams each. Last year the unit in which NIH played included teams from Walter Reed Hospital, Bureau of Standards, National Naval Medical Center, and the Bethesda Post Office.

Club dues, Mr. Smith said, are $1 a year. Trophies are awarded at the end of the season to the players with the best batting and fielding averages.

Last year the NIH team finished the season with 23 wins and only 2 defeats. Employees who wish to try out this year may obtain further information by calling Mr. Smith, Ext. 337.

TOMATO EXTRACT Cont'd

roots and leaves of the tomato plant. Synthesis also requires fewer chemical steps than is the case with cholesterol or stigmasterol.

The two hormones are important in the practice of medicine. Progesterone is widely used for various menstrual disturbances, for the relief of cervical cancer, and to prevent spontaneous abortion. Testosterone is similarly used for menstrual disturbances, as well as for the relief of breast cancer and treatment of eunuchoidism.

All of the above compounds, including tomatidine, from which these hormones can be prepared, may eventually prove to be sources for synthesizing cortisone. This hinges, however, on solving one crucial chemical reaction: the introduction of an oxygen group into Ring C. Once this is accomplished with any one of the compounds, the procedure can be adapted to the others. A reduction in the price of cortisone might then be effected.

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